

lens system and then inserts the rolled/folded system into the capsular bag. Once the lens system is in the capsular bag, the physician completes the assembly of the portions and aligns the lens system as needed.

[0162] It is contemplated that conventional intraocular lens folding devices, injectors, syringes and/or shooters can be used to insert any of the lens systems disclosed herein. A preferred folding/rolling technique is depicted in FIG. 39, where the lens system 100 is shown first in its normal condition (A). The anterior and posterior viewing elements 106, 118 are manipulated to place the lens system 100 in a low-profile condition (B), in which the viewing elements 106, 118 are out of axial alignment and are preferably situated so that no portion of the anterior viewing element 106 overlaps any portion of the posterior viewing element 118, as viewed along the optical axis. In the low-profile position (B), the thickness of the lens system 100 is minimized because the viewing elements 106, 118 are not "stacked" on top of each other, but instead have a side-by-side configuration. From the low-profile condition (B) the viewing elements 106, 118 and/or other portions of the lens system 100 can be folded or rolled generally about the transverse axis, or an axis parallel thereto. Alternatively, the lens system could be folded or rolled about the lateral axis or an axis parallel thereto. Upon folding/rolling, the lens system 100 is placed in a standard insertion tool as discussed above and is inserted into the eye.

[0163] When the lens system 100 is in the low-profile condition (B), the system may be temporarily held in that condition by the use of dissolvable sutures, or a simple clip which is detachable or manufactured from a dissolvable material. The sutures or clip hold the lens system in the low-profile condition during insertion and for a desired time after insertion. By temporarily holding the lens system in the low-profile condition after insertion, the sutures or clip provide time for fibrin formation on the edges of the lens system which, after the lens system departs from the low-profile condition, may advantageously bind the lens system to the inner surface of the capsular bag.

[0164] The physician next performs any adjustment steps which are facilitated by the particular lens system being implanted. Where the lens system is configured to receive the optic(s) in "open" frame members, the physician first observes/measures/determines the post-implantation shape taken on by the capsular bag and lens system in the accommodated and/or unaccommodated states and select(s) the optics which will provide the proper lens-system performance in light of the observed shape characteristics and/or available information on the patient's optical disorder. The physician then installs the optic(s) in the respective frame member(s); the installation takes place either in the capsular bag itself or upon temporary removal of the needed portion(s) of the lens system from the bag. If any portion is removed, a final installation and assembly is then performed with the optic(s) in place in the frame member(s).

[0165] Where the optic(s) is/are formed from an appropriate photosensitive silicone as discussed above, the physician illuminates the optic(s) (either anterior or posterior or both) with an energy source such as a laser until they attain the needed physical dimensions or refractive index. The physician may perform an intervening step of observing/measuring/determining the post-implantation shape taken on

by the capsular bag and lens system in the accommodated and/or unaccommodated states, before determining any needed changes in the physical dimensions or refractive index of the optic(s) in question.

[0166] FIG. 40 depicts a technique which may be employed during lens implantation to create a fluid flow path between the interior of the capsular bag 58 and the region of the eye anterior of the capsular bag 58. The physician forms a number of fluid-flow openings 68 in the anterior aspect of the capsular bag 58, at any desired location around the anterior opening 66. The fluid-flow openings 68 ensure that the desired flow path exists, even if a seal is created between the anterior opening 66 and a viewing element of the lens system.

[0167] Where an accommodating lens system is implanted, the openings 68 create a fluid flow path from the region between the viewing elements of the implanted lens system, and the region of the eye anterior of the capsular bag 58. However, the technique is equally useful for use with conventional (non-accommodating) intraocular lenses.

[0168] Although this invention has been disclosed in the context of certain preferred embodiments and examples, it will be understood by those skilled in the art that the present invention extends beyond the specifically disclosed embodiments to other alternative embodiments and/or uses of the invention and obvious modifications and equivalents thereof. Thus, it is intended that the scope of the present invention herein disclosed should not be limited by the particular disclosed embodiments described above, but should be determined only by a fair reading of the claims that follow.

What is claimed is:

1. An accommodating intraocular lens for implantation in an eye having an optical axis, said lens comprising:

an anterior portion comprised of a viewing element, said viewing element comprised of an optic having refractive power;

a posterior portion comprised of a viewing element, said viewing elements mounted to move relative to each other along the optical axis in response to force generated by the ciliary muscle of the eye;

a retention portion comprised of a first retention member attached to the anterior portion and a free end sized and oriented to contact a portion of the lens capsule such that extrusion of the implanted lens through the lens capsule opening is inhibited.

2. The lens of claim 1, wherein said retention portion is configured to displace the anterior aspect of the lens capsule anteriorly from said anterior viewing element and thereby prevent contact between said lens and an iris of said eye.

3. The lens of claim 1, wherein said retention portion further comprises a second retention member having a fixed end attached to the anterior portion and a free end sized and oriented to contact a portion of the lens capsule, said fixed ends of said first and second retention members being attached to said viewing element of said anterior portion.

4. The lens of claim 3, wherein said lens further comprises an optical axis which is adapted to be substantially coincident with the optical axis of the eye upon implantation of

said lens, and said first and second retention portions are arranged 180 degrees apart from each other about said optical axis of said lens.

5. The lens of claim 1, wherein said retention portion further comprises an opening formed therein to permit fluid flow therethrough.

6. An accommodating intraocular lens for implantation in an eye having an optical axis, said eye comprising a lens capsule having a capsule opening for receiving said lens, said lens comprising:

- a posterior portion comprised of a posterior viewing element;

- an anterior portion comprised of an anterior viewing element, said anterior viewing element comprised of an optic having refractive power, said viewing elements mounted to move relative to each other along the optical axis in response to force generated by the ciliary muscle of the eye; said anterior portion adapted to contact portions of the lens capsule while being spaced from the lens capsule in at least one location so as to provide a fluid flow channel that extends from a region between said viewing elements to a region outside said capsule.

7. The lens of claim 6, wherein said anterior portion comprises an anterior biasing element connected to a periphery of said anterior viewing element so that said periphery of said anterior viewing element is spaced from an inner surface of the lens capsule upon implantation of said lens, and said fluid flow channel is defined by said periphery, said anterior biasing element, said inner surface of said lens capsule and said capsule opening.

8. The lens of claim 7, further comprising a first retention member having a fixed end connected to said periphery of said anterior viewing element and a free end spaced from said fixed end, said fluid flow channel being defined by said periphery of said anterior viewing element, said anterior biasing element, said first retention member, said inner surface of said lens capsule and said capsule opening.

9. The lens of claim 6, wherein:

- said anterior portion comprises an anterior biasing element connected to a periphery of said anterior viewing element via first and second transition members extending from said periphery;

- said lens further comprises first and second retention members each having a fixed end connected to said periphery of said anterior viewing element and a free end spaced from said fixed end;

- each of said first and second transition members is located between and angularly spaced from said first and second retention members; and

- at least one of said transition members and said anterior biasing element is adapted to contact an inner surface of said lens capsule near said capsule opening and thereby maintain said periphery of said anterior viewing element in spaced relation to said inner surface of said lens capsule;

- said fluid flow channel being defined by said periphery, said transition members, said retention members, said inner surface and said anterior opening.

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